

D R A F T:RDStapleton:kmc  
9 June 1971

MEMORANDUM FOR: Deputy Director of Central Intelligence

THROUGH : Executive Director-Comptroller  
Director, Office of Planning, Programming  
& Budgeting  
Assistant Deputy Director for Intelligence

SUBJECT : Request for Approval to Contract for the  
Design and Fabrication of a Dual Format  
Data Block Reader with Fairchild Space  
& Defense Systems Division at a Cost of  
[redacted] from (FY-1971) R&D Funds

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1. This memorandum requests approval for the commitment of R&D funds for a NPIC contract. The specific request is stated in Paragraph ~~8~~ **nine**.

2. The National Photographic Interpretation Center, through NSCID #8 and the National Tasking Plan, is charged with providing the most effective, timely, and economic exploitation of photography and remote sensory products. The Center is also charged with providing certain additional support to the ~~Intelligence~~ Community, such as updating and maintaining the National Data Base and maintaining a back-up ephemeris capability. The manual, [redacted]

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[redacted] October 1970,

Page 9 states: "NPIC will maintain a back-up capability to the Mission Performance Report (MPR). In the event the MPR cannot be made available, NPIC will develop ephemeris and frame data based on telemetry tapes provided from the [redacted] and actual film

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formats. This information will then be made available to all MPR recipients."

3. While NPIC has been aware of this general "back-up data" requirement for quite some time, a new responsibility has been recently introduced. Latest reports indicate that the MPR, which <sup>precedes</sup> ~~preceeds~~ each mission, will not <sup>contain</sup> ~~carry~~ the time data read-out required for data reduction of the Mapping Camera System in the [redacted]

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this information is contained only in the binary data block recorded on the film. <sup>Therefore,</sup> ~~It will therefore~~ be necessary for NPIC to read the time data from each frame of Stellar/Terrain photography after receipt of the film in the Center. This information will enable NPIC to: / *Tabular form*

*A.1* Accurately update the National Data Bank <sup>Base / B</sup> ~~Bank~~ Provide Center components with <sup>Precise</sup> ~~accurate~~ data for positioning targets, <sup>date of</sup> ~~and~~ provide the Mapping Community with the accuracy required in charting and mapping. / *In this regard,* The main camera system time readout (which is included in the MPR) will not suffice for the Mapping Camera System since the two systems are separately operated, and it is possible that the conjugate imagery can have as much as 100%, or as little as 0%, common coverage between the terrain camera and the

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main panoramic cameras.

4. Investigation into <sup>the process of</sup> manually providing this readout has shown that for the 4000 frames of information involved, it may be possible <sup>Through</sup> interpolation, to provide this data within one working week. However, the <sup>inherent</sup> accuracy <sup>admittedly attitudinal</sup> of the system (time readout to 0.1 millisecond) ~~will~~ <sup>can</sup> not be ~~maintained~~ <sup>retained</sup> by interpolation of the data. Additionally, approval has <sup>now</sup> been granted to replace the 3400 type film with ultra thin base film in the fourth ~~S/I~~ <sup>Star of Terrain</sup> package <sup>Thru</sup> which will increase the frame count from approximately 4000 frames to approximately 7000 frames--virtually an impossible task for manual readout. It is anticipated that Center operations will require, and make the utmost use of, this refined accuracy inherent in the Stellar/Terrain system, as it will furnish target positional information <sup>of an order of</sup> ~~several~~ magnitudes better than current systems. Additionally, the Mapping, Charting and Geodetic (MCG) groups in the Intelligence Community will use the data in their (exploitation for position refinement.) <sup>what is this</sup>

5. The proposed Dual Format Data Block Reader (DFR) will provide the capability of rapidly and accurately reading time data from both the stellar and terrain camera formats  This electro-mechanic <sup>either</sup> device will read the data from ~~both~~ of two predetermined

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formats <sup>on</sup> negative, or positive film <sup>while</sup> the film is transported at a rate of 12 inches per second. The DFR will locate, read, organize, and place the data on magnetic tape <sup>with</sup> appropriate recognition patterns <sup>to be for</sup> ~~subsequent~~ ~~made available for~~ processing by the NPIC central computer. The data from the stellar data block will be combined with that from the terrain data block in the NPIC computer and, in turn, integrated with the existing MPR of the mission. An operator will be able to select a mode of operation, initiate signals, monitor, and exercise controls through the front panel assembly of the DFR.

6. The effort is felt to be fairly straight forward <sup>a minimum of technical</sup> with ~~little~~ risk involved due to the fact that the selected contractor has <sup>in the past,</sup> built similar readers for the Center. The first reader was built to <sup>accommodate</sup> ~~handle~~ the KH-4A data <sup>block,</sup> while the second <sup>handles both</sup> ~~will handle~~ the KH-4B and the Stellar/Terrain data  Investigation into <sup>a</sup> modification

of the second reader to handle  revealed that it would be more expensive to modify the existing equipment than to build a new reader specifically for the

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7. The contractor has offered NPIC ~~the choice of two~~ <sup>approaches.</sup> ~~options for this project.~~ <sup>Under the first option, the contractor will</sup> ~~One in which he supplied the~~

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*and supply both*  
 build the reader, the magnetic tape drive, and the printer. *Under the*  
 second option, *the contractor should supply only the reader;*  
 the magnetic tape drive and its  
 electronics, and the printer and associated electronics

*would* be supplied as GFE. The second option is the *more* most

*First,*  
 desirable not only because it saves *but also* 25X1  
*and second* because the equipment can be supplied *readily* as *using components from*  
*these* of two complete systems is *currently* being utilized *by* NPIC. *Only one the previous*  
*Completed Systems.*

There is no anticipated follow-on to this procurement,

*SINCE*  
 one instrument will handle the anticipated workload.

8.  will be the Project 25X1  
 Officer for this contract.  is 25X1  
 appropriate for this work. Agency association with the  
 project will be classified CONFIDENTIAL, but the work,  
 project title and reports will be UNCLASSIFIED.

9. It is requested that approval be granted to  
 negotiate a contract with Fairchild Space and Defense  
 Systems for the design and fabrication of a Dual Format  
 Data Block Reader at a cost not to exceed  from 25X1  
 FY-<sup>1972</sup>~~1971~~ R&D funds.

ARTHUR C. LUNDAHL  
 Director  
 National Photographic Interpretation Center

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Attachments:

1. Proposal
2. Form 2420

CONCUR:

Assistant Deputy Director for Intelligence

Date

APPROVED:

Deputy Director of Central Intelligence

Date

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